

I claim:

1. A flip chip LED package array comprising:
 - a ceramic substrate made of a material capable of enduring the eutectic temperature of the fabrication process;
 - 5 a metal wire layer distributed on the surface of the ceramic substrate; and
 - one or more LED chips mounted on the metal wire layer on the ceramic substrate, the LED chips being electrically connected together via the metal wire layer to form an electric circuit.
2. The flip chip LED package array as in claim 1, wherein one or more cavities
10 are further formed in the ceramic substrate to accommodate at least one LED chip.
3. The flip chip LED package array as in claim 2, wherein a reflecting film is formed on the surface of each of the cavities.
4. The flip chip LED package array as in claim 1, wherein a reflecting cover is
15 further annularly formed around each of the LED chips.
5. The flip chip LED package array as in claim 4, wherein the reflecting cover has one or more LED chips therein.
6. The flip chip LED package array as in claim 4, wherein a lens further covers the upper surface of the reflecting cover.
- 20 7. The flip chip LED package array as in claim 1, wherein the material of the ceramic substrate is selected from AlN, Al₂O₃, BeO, SiC, ZrO₂ and glass ceramic.
8. The flip chip LED package array as in claim 1, wherein the electric circuit is in one of the forms consisting of parallel, serial and serial/parallel

connections.

9. The flip chip LED package array as in claim 1, wherein a metal plate is further disposed on another surface of the ceramic substrate.

10. The flip chip LED package array as in claim 1, wherein the LEDs are mounted on the metal wire layer by using a eutectic substrate.

11. The flip chip LED package array as in claim 10, wherein the eutectic material is Au-Sn or Au-Si.

12. A flip chip LED package unit comprising:

a metal body;

10 a ceramic substrate mounted on the metal body, a conducting layer being distributed on the ceramic substrate;

an LED chip mounted on the surface of the conducting layer on the ceramic substrate to achieve electric connection, the ceramic substrate being made of a material having an coefficient of thermal expansion matched with the LED

15 chip;

an external carrier substrate arranged on the metal body, the LED chip achieving electric connection with the external carrier substrate via the conducting layer as external conducting contacts; and

a lens covering said LED chip.

20 13. The flip chip LED package unit as in claim 12, wherein a reflecting cover is further annularly disposed on the external carrier substrate around the LED chip so that the lens can be mounted on the reflecting cover.

14. The flip chip LED package unit as in claim 13, wherein a reflecting film is formed on the inner surface of the reflecting cover.

15. The flip chip LED package unit as in claim 13, wherein the reflecting cover is mounted on the external carrier substrate by using a non-conducting attach.
16. The flip chip LED package unit as in claim 12, wherein the material of the ceramic substrate is selected from AlN, Al₂O₃, BeO, SiC, ZrO₂ and glass ceramic.
17. The flip chip LED package unit as in claim 12, wherein the external carrier substrate is a printed circuit board or a metal leadframe.
18. The flip chip LED package unit as in claim 17, wherein the metal leadframe can be mounted on the ceramic substrate by means of sintering.
19. The flip chip LED package unit as in claim 12, wherein the conducting layer on the ceramic substrate achieves electric connection with the external carrier substrate by using one or more metal wires.
20. The flip chip LED package unit as in claim 12, wherein the external carrier substrate is located at the lower surface of the ceramic substrate, and the external carrier substrate uses one or more conducting plugs to connect with the ceramic substrate.
21. The flip chip LED package unit as in claim 12, wherein a metal heat-radiating fin is further disposed on the lower surface of the ceramic substrate.
22. The flip chip LED package unit as in claim 12, wherein the LED chip is mounted on the conducting layer of the ceramic substrate by using a eutectic material.
23. The flip chip LED package unit as in claim 22, wherein the eutectic

material is Au-Sn or Au-Si.

24. The flip chip LED package unit as in claim 12, wherein the ceramic substrate is mounted on the metal body by using a thermally conductive adhesive or solder.

5 25. The flip chip LED package unit as in claim 12, wherein the material of the metal body includes copper.

26. A flip chip LED package unit comprising:

a ceramic substrate made of a material capable of enduring the eutectic temperature of the fabrication process;

10 a metal wire layer distributed on the surface of the ceramic substrate;

at least an LED chip mounted on the conducting layer on the ceramic substrate to achieve electric connection.

27. The flip chip LED package unit as in claim 26, wherein one or more cavities are further formed in the ceramic substrate to accommodate the LED
15 chip.

28. The flip chip LED package unit as in claim 27, wherein a reflecting film is formed on the surface of each of the cavities.

29. The flip chip LED package unit as in claim 26, wherein a reflecting cover is further annularly disposed around the LED chip.

20 30. The flip chip LED package unit as in claim 29, wherein a lens further covers the upper surface of the reflecting cover.

31. The flip chip LED package unit as in claim 26, wherein the material of the ceramic substrate is selected from AlN, Al₂O₃, BeO, SiC, ZrO₂ and glass ceramic.

32. The flip chip LED package unit as in claim 26, wherein a metal plate is further disposed on another surface of the ceramic substrate.
33. The flip chip LED package unit as in claim 26, wherein the LED chip is mounted on the metal wire layer by using a eutectic material.
- 5 34. The flip chip LED package unit as in claim 33, wherein the eutectic material is Au-Sn or Au-Si.